

**REMARKS**

Claims 1, 4, 7 and 8 are rejected; and claims 5-12 are withdrawn from consideration as being directed to a non-elected invention.

Review and reconsideration on the merits are requested.

Claims 1, 4 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Araki et al. (U.S. Patent No. 5,670,593; “Araki”).

Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Araki in view of Hirashima et al. (U.S. Patent No. 5,856,392; “Hirashima”), and further view of Araki et al. (WO 95-08598A, the English equivalent is US 5,925,705).

Applicants respectfully traverse.

Present claim 1 recites a tetrafluoroethylene polymer aqueous dispersion obtained by carrying out a tetrafluoroethylene polymerization in an aqueous medium in the presence of a fluorovinyl group-containing emulsifier. The tetrafluoroethylene polymer aqueous dispersion contains a particle comprising a tetrafluoroethylene polymer dispersed in said aqueous medium. The fluorovinyl group-containing emulsifier comprises a fluorovinyl group-containing compound (V) represented by the general formula (V):



wherein f represents an integer of 0 to 10 and Y represents  $-\text{SO}_3\text{M}$  or  $-\text{COOM}$  in which M represents H,  $\text{NH}_4$  or an alkali metal. The tetrafluoroethylene polymer aqueous dispersion has a fluorine-containing surfactant content of not higher than 50 ppm by mass.

Further, claim 1 recites that the tetrafluoroethylene polymer is a perfluoro-based polymer and has a tetrafluoroethylene unit content exceeding 60 mole percent.

The compound of formula (V) is an impurity in a polymerization for producing a perfluoro-based polymer having a TFE unit content exceeding 60 mole percent, and therefore, it would not have been obvious to use the compound of formula (V) in the dispersion of Araki.

The Examiner considered that the monomer can be tetrafluoroethylene as shown in claim 12 of Araki, and that the specific fluorovinyl-group emulsifier is disclosed in claim 1 of Araki.

However, Araki does not disclose the specific fluorovinyl group-containing emulsifier of formula (V). Rather, claim 1 of Araki discloses many kinds of "monomers."

That is, there is nothing in Araki which would lead one of ordinary skill to carry out polymerization in the presence of the fluorovinyl group-containing emulsifier represented by formula (V), where the resulting tetrafluoroethylene polymer has a tetrafluoroethylene unit content exceeding 60 mole percent as claimed in claim 1.

The Examiner further considered that a hydroxyl version of the reactive emulsifier is used in Examples 33-35 of Araki. Therefore, the Examiner concludes, if the N-1-OH surfactant used in these examples was substituted with any of the N-1-COOH, N-2-COOH, or N-1-COONH<sub>4</sub> which are said to be the same emulsifiers, one of ordinary skill would have a reasonable expectation of success in the polymerization process (involving higher tetrafluoroethylene amounts).

However, N-1-OH is not an emulsifier but rather is a monomer for providing a fluorine-containing polymer having a functional group (column 5, lines 30-36 of Araki).

This is evidenced by the fact that the polymerizations of Examples 33-35 of Araki are suspension polymerizations. In Examples 33-35, the same amount of R-114 as pure water was supplied, and di-n-propyl peroxydicarbonate was introduced as an initiator. Furthermore, a

dispersion was not obtained, but rather a white powder was directly obtained. These are not polymerizations carried out in the presence of a fluorovinyl group-containing emulsifier, but are suspension polymerizations.

Therefore, there is no teaching or suggestion that the N-1-OH surfactant used in these examples can be substituted with any of N-1-COOH, N-2-COOH, and N-1-COONH<sub>4</sub> with a reasonable expectation of success.

The compound of formula (V) must be selected from among many monomers which are disclosed by Araki, and, as shown above, with no reasonable expectation of success. Claim 1 is therefore patentable over Araki.

Furthermore, the compound of formula (V) is an impurity in a polymerization for producing a perfluoro-based polymer having a tetrafluoroethylene content exceeding 60 mole percent. This is yet another reason why it would not have been obvious to use the compound of formula (V) in the dispersion of Araki.

Hirashima and Araki et al. (WO 95-08598A) do not make up for the deficiencies of Araki.

In view of the previous amendment to claim 1 and the foregoing remarks, it is respectfully submitted that the present claims are patentable over the cited prior art, and withdrawal of the foregoing rejections under 35 U.S.C. § 103(a) is respectfully requested.

Withdrawn independent method claim 11 includes all of the limitations of product claim 1. If claim 1 is found to be allowable, Applicants respectfully request rejoinder of withdrawn method claims 11 and 12 pursuant to MPEP § 821.04.

Withdrawal of all rejections, rejoinder of claims 11 and 12 and allowance of claims 1, 4, 7, 8, 11 and 12 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Abraham J. Rosner  
Registration No. 33,276

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

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23373  
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